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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

GELAGAY, SHEWAYE

ART UNIT

PAPER NUMBER

2437

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/634,155	Applicant(s) OGAWA ET AL.	
	Examiner SHEWAYE GELAGAY	Art Unit 2437	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 November 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 7-10, 13-16 and 19-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 7-10, 13-16 and 19-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office Action is in response to Applicant's amendment filed on November 26, 2008. Claims 1, 3, 7-10, 13-16, 19-21 and 23 have been amended. Claims 1-4, 7-10, 13-16 and 19-24 are pending.

Response to Arguments

2. Applicant's arguments filed 11/26/08 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 3, 7, 9, 13, 15, 19, 21 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cox et al. (hereinafter Cox) US Patent Number 5,915,027 in view of Applicants Own Admitted Art (hereinafter Admission) in view of Tewfik et al. (hereinafter Tewfik) US 6,272,534.

As per claims 1, 7, 13 and 19:

Cox teaches a method for embedding digital watermark data in digital data contents, said method comprising the steps of:

receiving said digital data contents and said digital watermark data; (col. 8, lines 36-39)

dividing said digital data contents into block data; (col. 8, lines 36-39)

obtaining a frequency coefficient of said block data, by performing an orthogonal transform; (col. 8, lines 40-54)

obtaining a complexity of said block data; (col. 8, lines 40-54)

obtaining an amount of transformation of said frequency coefficient from said complexity and said digital watermark data by using a quantization width; (col. 8, lines 40-54; col. 10, lines 13-44)

embedding said digital watermark data in said digital data contents by transforming said frequency coefficient by said amount; (col. 6, lines 24-38; col. 8, lines 40-54; col. 10, lines 13-44) and

generating watermarked digital data contents. (col. 6, lines 24-38; col. 8, lines 40-54; col. 10, lines 13-44)

Cox does not explicitly teach quantization width such that the larger the complexity is, the larger said amount of data transformation. Admission in analogous art, however, teaches quantization width such that the larger the complexity is, the larger said amount of data transformation. (page 1, pp. 6) Therefore it would have been obvious to one ordinary skill in the art at the time the invention was made to modify the system disclosed Cox with Admission in order to suppress degradation of image quality which may be caused by the watermark. (page 1, pp.6; Admission)

Art Unit: 2437

Both references do not explicitly disclose obtaining a complexity of said block data by performing a Wavelet transform. Tewfik in analogous art, however, discloses obtaining a complexity of said block data by performing a Wavelet transform. (col. 6, lines 1-37; col. 7, line 5-col. 8, line 64) Therefore it would have been obvious to one ordinary skill in the art at the time the invention was made to modify the system disclosed Cox and Admission Tewfik in order to provide a watermarking procedures that do not suffer from allowing a pirate to claim copyright ownership by showing that both the publicly available data and the original of the rightful owner contain a copy of their counterfeit watermark. (col. 3, lines 22-25; Tewfik)

As per claims 3, 9, 15, 21 and 23:

Cox teaches a method for embedding digital watermark data in digital data contents, said method comprising the steps of:

receiving said digital data contents and said digital watermark data; (col. 8, lines 36-39)

dividing said digital data contents into block data; (col. 8, lines 36-39)

obtaining a frequency coefficient of said block data, by performing an orthogonal transform; (col. 8, lines 40-54)

obtaining an amount of transformation of said frequency coefficient from said digital watermark data by using a quantization width corresponding to said frequency coefficient, said quantization width being obtained beforehand according to a manipulation method of said digital data contents; (col. 5, lines 47-58; col. 6, lines 3-49)

embedding said digital watermark data in said digital data contents by transforming said frequency coefficient by said amount; (col. 2, lines 51-55; col. 6, lines 3-49) and

generating watermarked digital data contents. (col. 2, lines 51-55; col. 6, lines 3-49)

Cox does not explicitly disclose digital data contents, wherein said amount of transformation is obtained such that the larger a change amount of said digital data contents due to processing by said manipulation method is, the larger said amount of transformation is. Admission in analogous art, however, teaches digital data contents, wherein said amount of transformation is obtained such that the larger a change amount of said digital data contents due to processing by said manipulation method is the larger said amount of transformation is. (page 1, pp. 6) Therefore it would have been obvious to one ordinary skill in the art at the time the invention was made to modify the system disclosed Cox with Admission in order to suppress degradation of image quality which may be caused by the watermark. (page 1, pp.6; Admission)

Both references do not explicitly disclose obtaining a complexity of said block data based on the difference values of frequency coefficients between block data of original image data and block data that is obtained by manipulating said block data of said original image data with said manipulation. Tewfik in analogous art, however, discloses obtaining a complexity of said block data based on the difference values of frequency coefficients between block data of original image data and block data that is obtained by manipulating said block data of said original image data with said

Art Unit: 2437

manipulation. (col. 6, lines 1-37; col. 7, line 5-col. 8, line 64) Therefore it would have been obvious to one ordinary skill in the art at the time the invention was made to modify the system disclosed Cox and Admission Tewfik in order to provide a watermarking procedures that do not suffer from allowing a pirate to claim copyright ownership by showing that both the publicly available data and the original of the rightful owner contain a copy of their counterfeit watermark. (col. 3, lines 22-25; Tewfik)

1. Claims 2, 4, 8, 10, 14, 16, 20, 22 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cox et al. (hereinafter Cox) US Patent Number 5,915,027 in view of Applicants Own Admitted Art (hereinafter Admission) in view of Tewfik et al. (hereinafter Tewfik) US 6,272,534 and further in view of Ho et al. (hereinafter Ho) US Patent Number 6,983,057.

As per claims 2, 8, 14 and 20:

The combination of Cox, Admission and Tewfik teaches all the subject matter as discussed above. In addition, Cox further discloses a method said step of obtaining said complexity of said block data comprising the steps of: transforming said block data, by applying a wavelet transform, into coefficients of said wavelet transform, and (col. 4, lines 39-65) obtaining said complexity on the basis of the number of high frequency coefficients in said coefficients of said wavelet transform, (col. 4, lines 39-65; col. 9, lines 1-16) None of the references do not explicitly disclose each of said high frequency coefficients exceeding a threshold. Ho in analogous art, however, discloses each of said high frequency coefficients exceeding a threshold. (col. 5, lines 38-43) Therefore, it would have been obvious to one ordinary skill in the art at the time the invention was

Art Unit: 2437

made to modify the method disclosed by Cox, Admission and Tewfik with Ho in order to embed watermark in the high frequency region. (col. 5, line 43; Ho)

As per claims 4, 10, 16, 22 and 24:

The combination of Cox, Admission and Tewfik teaches all the subject matter as discussed above. In addition, Cox further discloses a method wherein said quantization width is obtained by a method comprising the steps of: dividing first digital data contents into one or a plurality of first block data; (col. 4, lines 38-65; col. 8, lines 36-39) dividing second digital data contents into one or a plurality of second block data, said second digital data contents being obtained by manipulating said first digital data contents with a predetermined manipulation method; (col. 4, lines 38-65; col. 8, lines 36-39) transforming said first block data and said second block data into first frequency coefficients and second frequency coefficients respectively by applying an orthogonal transform; (col. 4, lines 38-65; col. 8, lines 36-39) None of the references explicitly disclose obtaining difference values between said first frequency coefficients and said second frequency coefficients for each frequency coefficient; calculating a standard deviation of distribution of said difference values; and obtaining said quantization width by multiplying said standard deviation by a watermark embedding strength. Ho in analogous art, however, discloses obtaining difference values between said first frequency coefficients and said second frequency coefficients for each frequency coefficient; calculating a standard deviation of distribution of said difference values; and obtaining said quantization width by multiplying said standard deviation by a watermark embedding strength. (col. 7, line 45-col. 8, line 49) Therefore, it would have been

Art Unit: 2437

obvious to one ordinary skill in the art at the time the invention was made to modify the method disclosed by Cox, Admission and Tewfik with Ho in order to perform different statistical analysis of frequency coefficients to determine optimum off-set positions. (col. 8, lines 2-3; Ho)

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SHEWAYE GELAGAY whose telephone number is (571)272-4219. The examiner can normally be reached on 8:00 am to 5:30 pm.

Art Unit: 2437

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Emmanuel Moise can be reached on 571-272-3865. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/S. G./
Examiner, Art Unit 2437

/Emmanuel L. Moise/
Supervisory Patent Examiner, Art Unit 2437